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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|------------------------------------------------------------------------------------------|-------------|----------------------|--------------------------|------------------|
| 10/573,702 | 03/27/2006 | Shigeki Miyashita | 127434 | 7162 |
| 25944 7590 03/07/2007 OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320 | | | EXAMINER TRAN, BINH Q | |
| | | | ART UNIT 3748 | PAPER NUMBER |
| SHORTENED STATUTORY PERIOD OF RESPONSE | | MAIL DATE | DELIVERY MODE | |
| 3 MONTHS | | 03/07/2007 | PAPER | |

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/573,702

Applicant(s)

MIYASHITA, SHIGEKI

Examiner

BINH Q. TRAN

Art Unit

3748

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 03/27/2006.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____.

DETAILED ACTION

Receipt and entry of Applicant's Preliminary Amendment dated March 27, 2006 is acknowledged.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1-12, 14-15, 17-19, 22, 24, 26, and 28 are rejected under 35 U.S.C. 102 (b) as being anticipated by Katoh et al. (Katoh) (Patent Number 5,412,945).

Regarding claim 1, Katoh discloses an exhaust gas control apparatus for an internal combustion engine (1), provided with a NOx storage/reduction catalyst (e.g. 18, 19) provided in an exhaust passage (16) and which stores NOx in exhaust gas by at least one of adsorption and absorption when an air-fuel ratio of in-flowing exhaust gas is lean, and then reduces and purifies the stored NOx using reduction components in the exhaust gas when the air-fuel ratio of the in-flowing exhaust gas is rich, the apparatus comprising: an upstream side portion (e.g. a-d; A) of a carrier of the NOx storage/reduction catalyst (e.g. a-b; A), which is positioned on an upstream side of an exhaust gas flow, and a downstream side portion (e.g. c-d; B) of the carrier (e.g. c-d; B) of the NOx storage/reduction catalyst (e.g. 18, 19), which is positioned on the downstream side of the exhaust gas flow, wherein the carrier (e.g. a-d; A-B) carries an oxygen storage component that absorbs oxygen in the exhaust gas when the air-fuel ratio of the exhaust gas is lean and releases the absorbed oxygen when the air-fuel ratio of the exhaust gas is rich, and the amount of the oxygen storage component on the upstream side portion of the carrier (e.g. a-d; A-B) is made less than the amount of the oxygen storage component on the downstream side portion of the carrier (e.g. See col. 3, lines 44-67; col. 4, lines 1-67; col. 5, lines 1-41); characterized in that a NOx storage capacity of the upstream side portion (e.g. a-d; A) of the carrier is made greater than the NOx storage capacity of the downstream side portion (e.g. c-d; B) of the carrier (e.g. 18, 19) (e.g. See Figs. 1-3; col. 6, lines 22-67; col. 7, lines 1-67).

Regarding claim 2, Katoh further discloses that the upstream side portion of the carrier and the downstream side portion of the carrier carry at least one of platinum, palladium and rhodium, and the NOx storage capacity of the upstream side portion of the carrier is made greater than the NOx storage capacity of the downstream side portion of the carrier by changing an

amount of at least one of platinum, palladium and rhodium carried on the upstream side portion of the carrier and the downstream side portion of the carrier (e.g. See Figs. 1-3; col. 6, lines 22-67; col. 7, lines 1-67).

Regarding claim 3, Katoh further discloses that the NO_x storage capacity of the upstream side portion of the carrier is made greater than the NO_x storage capacity of the downstream side portion of the carrier by changing at least one of a carrier cell shape, a carrier cell size, and a carrier cell number on the upstream side portion of the carrier and the downstream side portion of the carrier (e.g. See Figs. 1-3; col. 6, lines 22-67; col. 7, lines 1-67).

Regarding claim 4, Katoh further discloses that the upstream side portion of the carrier and the downstream side portion of the carrier are provided separately (e.g. See Figs. 1-3; col. 6, lines 22-67; col. 7, lines 1-67).

Regarding claim 5, Katoh further discloses that the upstream side portion of the carrier and the downstream side portion of the carrier are provided integrally (e.g. See Figs. 1-3; col. 6, lines 22-67; col. 7, lines 1-67).

Prior Art

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure and consists of five patents:

Kubo et al. (Pat. No. 6539709), Katoh (Pat. No. 6499294), Ide et al. (Pat. No. 6988359), Nagai et al. (Pat. No. 7162862), and Katayama et al. (Pat. No. 6502389) all disclose an exhaust gas purification for use with an internal combustion engine.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Binh Tran whose telephone number is (571) 272-4865. The examiner can normally be reached on Monday-Friday from 8:00 a.m. to 4:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E. Denion, can be reach on (571) 272-4859. The fax phone numbers for the organization where this application or proceeding is assigned are (571) 273-8300 for regular communications and for After Final communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

BT
March 03, 2007



Binh Q. Tran
Patent Examiner
Art Unit 3748